

Valorization of Baltic Sea blue mussels (*Mytilus edulis trossulus*)

The key to unlock a long-term economically and ecologically sustainable and cost-efficient/no-cost measure to reduce nutrient loads



Ecopelag

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Executive summary of the project

A vast amount of resources has successfully decreased the external nutrient load to the Baltic Sea. However, nutrient levels have not declined in accordance with the reduced input, likely due to high internal loading. Evidently, there is still a need for further reduction of the external loading, preferably in conjunction with sea-based measures, such as mussel farming, that more directly can reduce the internal loading. Equally as important, mussel farming provides means to recycle nutrients thereby addressing the global use of P and N which both have passed the “planetary boundary” that is thought to be safe and sustainable in the long term.

The main goal of this project has been to increase the cost efficiency of mussel farming as a nutrient reducing measure in the Baltic Sea by “driving down” the cost per reduction unit (N and P) to zero, or negative (i.e. profit). We are convinced that this will be possible in the near future as a result of this and other linked projects. The project design was set up to first of all substantially lower the production cost, secondly, it aims at developing high value products ready for the consumer market, not primary products for the industry (e.g. animal feed industry), and thirdly, the resulting start-up company will be vertically integrated, controlling most of the value chain from farm all the way to the customers hand.

The project set out to solve these challenges through three work packages (WPs). WP 1 Farming - substantially lowering the production cost of mussels by developing, adapting, and investing in harvest equipment specialized for the small blue mussels of the Baltic Sea, WP 2 Production - establish a small scalable production line that separates the mussel meat from the shell thereby creating two highly usable primary products, WP 3 Product development, marketing and sales - develop two high value products ready for the market.

Unfortunately the funding for “Valorization of Baltic Sea blue mussels” was reduced compared to the original budget. For that reason, not all the outputs and milestones have been included in the project. However, the support from the BSAP-fund has been very important for the validation of a separation technique for meat and shells. It has also contributed to the first test batches of dog and cat food and the initiation of an updated harvesting system. Today the project idea is fully financed, and we will do our best to convert the experiences and results from “Valorization of Baltic Sea blue mussels” to complete the remaining activities in full – hopefully leading to successfully implement mussel farming as a permanent and cost efficient measure for battling eutrophication in the Baltic Sea.